

Serial No.: 10/807,368
Docket No.: R0043CON3
Amendment Dated May 4, 2006
Responsive to the Office Action dated February 9, 2006

Amendments to the Claims:

A complete listing of all claims is presented below.

- 5 1. (Currently amended) A surgical apparatus comprising:
 an elongated cannula having a lumen extending therein between proximal and
 distal ends;
 a vessel retractor disposed to slide within the lumen to extend a distal end thereof
 beyond the distal end of the cannula, the retractor having a vessel cradle on a distal end
10 thereof generally having walls defining a space for receiving and capturing a vessel; and
 an angling device attached near the distal end of the retractor and extending within
 the cannula toward the proximal end thereof for selectively deflecting the distal end of the
 retractor during extension thereof away from a central axis of the cannula in response to
 manipulation of the angling device near the proximal end of the cannula, the cradle being
15 oriented on the retractor such that the space opens away from the central axis to receive
 and capture a vessel therein and displace it away from the central axis.
2. (Original) The surgical apparatus according to claim 1 in which the angling device
 includes a tension member extending within the cannula from attachment to the retractor beyond
20 the distal end of the cannula, to a handle disposed near the proximal end of the cannula for
 selectively exerting tension on the retractor to deflect a portion of the retractor extended beyond
 the distal end of the cannula in response to manual pull applied to the handle relative to the
 cannula.
3. (Original) The surgical apparatus according to claim 2 including an auxiliary lumen
25 extending within the cannula between distal and proximal ends thereof; and
 the tension member extends through the auxiliary lumen

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4. (Original) The surgical apparatus according to claim 2 in which the distal portion of the retractor is resiliently flexible for deflection in response to pull exerted thereon by the tension member.

5. (Currently amended) The surgical apparatus according to claim 2 in which at least the distal portion includes a resiliently flexible support that is slidably disposed within the lumen and that includes the a cradle attached at a distal end thereof.

6. (Original) The surgical apparatus according to claim 5 in which the cradle is disposed to engage a vessel structure for selectively displacing the vessel structure in response to tensile force exerted on the retractor through the tension member attached thereto.

7. (Currently amended) A method for selectively displacing a vessel structure using an elongated cannula including a retractor disposed at the distal end of the cannula for engaging the vessel structure, the method comprising the steps for:

advancing the distal end of the cannula to a location adjacent a vessel structure;

engaging the vessel structure with the retractor; and

positioning the distal end of the cannula near the vessel structure;

selectively deflecting the retractor to engage and displace the vessel structure

laterally away from axial alignment with the elongated cannula;

providing a surgical tool disposed near the distal end of the cannula; and

engaging a branch vessel of the vessel structure with the surgical tool to sever the branch vessel from the vessel structure.

8. (Original) The method according to claim 7 in which the retractor includes an angling device attached to the retractor and extending in the cannula between distal and proximal ends thereof, the method further comprising the step for:

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selectively manipulating the angling device near the proximal end of the cannula to deflect the retractor and displace the vessel structure engaged therewith at the distal end of the cannula.

5 9. (Original) The method according to claim 8 in which the angling device includes a tension member attached to the retractor and to a handle near the proximal end of the cannula, the method further comprising the step for:

manually manipulating the handle to exert deflecting force on the retractor through the tension member.

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10. (Previously presented) The method according to claim 7 further including a sliding tube extending in the cannula and being movable over the retractor between a first position wherein the retractor protrudes from a distal end of the sliding tube and deflects at an angle with respect to the central axis of the cannula, and a second position wherein the sliding tube

15 substantially encases the retractor and straightens it, the method further comprising the step for:

selectively manipulating the sliding tube to deflect the retractor and displace the vessel structure engaged therewith at the distal end of the cannula.

20 11. (Previously presented) The method according to claim 10 in which a button is provided near the proximal end of the cannula for manipulating the sliding tube, the method further comprising the step for:

manually manipulating the button to displace the sliding tube from the first position to the second position, thus displacing the vessel structure.

25 12. (Previously presented) The method according to claim 7 wherein the retractor includes two legs projecting from the cannula and connected at a distal cradle for engaging the vessel structure, and wherein one of the retractor legs is rotationally connected to a sliding knob at a proximal end of the cannula, the method further comprising the step for:

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manually manipulating the sliding knob to rotationally displace the one leg and twist the cradle, thus displacing the vessel structure.

13. (Currently amended) The method according to claim 7 wherein the surgical tool is supported in a lumen of the cannula and extends beyond the distal end thereof for simultaneous operation with the retractor, further comprising the steps for:

linearly displacing the surgical tool with respect to the retractor;
positioning the distal end of the cannula near the vessel structure;
engaging the vessel structure with the retractor and selectively displacing the vessel structure laterally away from axial alignment with the elongated cannula;
providing a surgical tool disposed near the distal end of the cannula; and
engaging a branch vessel of the vessel structure with the surgical tool to sever the branch vessel from the vessel structure.

14. (Canceled)

15. (Canceled)

16. (Canceled)

17. (Previously presented) The surgical apparatus of claim 1 wherein the retractor includes two legs projecting from the cannula and connected at a distal cradle for engaging a vessel, and further including a sliding knob at the proximal end of the cannula rotationally connected to one of the retractor legs for rotationally displacing the one leg and rotating the cradle.

18. (Previously presented) The surgical apparatus of claim 1 further including a surgical tool supported in a lumen of the cannula and extending beyond the distal end thereof for

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simultaneous operation with the retractor for performing a surgical procedure on the vessel engaged by the retractor.

19. (Previously presented) The surgical apparatus of claim 18 in which the retractor
5 and the surgical tool are relatively movable near the distal end of the cannula to facilitate severing a portion of the vessel engaged by the retractor.

20. (Previously presented) The surgical apparatus of claim 1 wherein the retractor
includes at least one arm slidably disposed within the lumen of the cannula that supports the a
10 vessel cradle in lateral orientation with respect to the arm.

21. (New) A surgical apparatus comprising:
an elongated cannula having a lumen extending therein between proximal and
distal ends;
15 a retractor disposed to slide within the lumen to extend a distal end thereof beyond the distal end of the cannula;
a sliding tube extending in the cannula and being movable over the retractor
between a first position wherein the retractor protrudes from a distal end of the sliding
tube and deflects at an angle with respect to the central axis of the cannula, and a second
20 position wherein the sliding tube substantially encases the retractor and straightens it, the
sliding tube being the movable between the second position and the first position for
selectively deflecting the distal end of the retractor during extension thereof away from a
central axis of the cannula.

22. (New) The surgical apparatus of claim 21 further including a button provided near
25 the proximal end of the cannula for manipulating the sliding tube from the first position to the second position.

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23. (New) The surgical apparatus of claim 22 further including a spring biasing the sliding tube into the first position.

24. (New) The surgical apparatus of claim 21 further including a surgical tool supported in a lumen of the cannula and extending beyond the distal end thereof for simultaneous operation with the retractor for performing a surgical procedure on the vessel engaged by the retractor.

25. (New) The surgical apparatus of claim 24 in which the retractor and the surgical tool are relatively movable near the distal end of the cannula to facilitate severing a portion of the vessel engaged by the retractor.

26. (New) The surgical apparatus of claim 21 in which the vessel retractor has a vessel cradle on a distal end thereof having walls oriented to define a space that opens away from the central axis to receive and capture a vessel and displace it away from the central axis when the distal end of the retractor is selectively deflected.

27. (New) A surgical apparatus comprising:
an elongated cannula having a lumen extending therein between proximal and distal ends;
a retractor disposed to slide within the lumen to extend a distal end thereof beyond the distal end of the cannula;
an angling device attached near the distal end of the retractor and extending within the cannula toward the proximal end thereof for selectively deflecting the distal end of the retractor during extension thereof away from a central axis of the cannula in response to manipulation of the angling device near the proximal end of the cannula; and

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a surgical tool supported in a lumen of the cannula and extending beyond the distal end thereof for simultaneous operation with the retractor for performing a surgical procedure on the vessel engaged by the retractor,

wherein the retractor and the surgical tool are relatively movable near the distal end of the cannula to facilitate severing a portion of the vessel engaged by the retractor.

28. (New) The surgical apparatus according to claim 27 in which at least the distal portion includes a resiliently flexible support that is slidably disposed within the lumen and that includes a cradle attached at a distal end thereof.

29. (New) The surgical apparatus according to claim 28 in which the cradle is disposed to engage a vessel structure for selectively displacing the vessel structure in response to tensile force exerted on the retractor through the tension member attached thereto.

30. (New) The surgical apparatus of claim 27 in which the vessel retractor has a vessel cradle on a distal end thereof having walls oriented to define a space that opens away from the central axis to receive and capture a vessel and displace it away from the central axis when the distal end of the retractor is selectively deflected.

31. (New) A method for selectively displacing a vessel structure using an elongated cannula including a retractor disposed at the distal end of the cannula for engaging the vessel structure, a sliding tube extending in the cannula and being movable over the retractor between a first position wherein the retractor protrudes from a distal end of the sliding tube and deflects at an angle with respect to the central axis of the cannula, and a second position wherein the sliding tube substantially encases the retractor and straightens it, the method comprising the steps for:
advancing the distal end of the cannula to a location adjacent a vessel structure;
engaging the vessel structure with the retractor; and

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selectively manipulating the sliding tube to deflect the retractor and displace the vessel structure engaged therewith at the distal end of the cannula.

5 32. (New) The method according to claim 31 in which a button is provided near the proximal end of the cannula for manipulating the sliding tube, the method further comprising the step for:

manually manipulating the button to displace the sliding tube from the first position to the second position, thus displacing the vessel structure.

10 33. (New) The method according to claim 31 in which the retractor includes an angling device attached to the retractor and extending in the cannula between distal and proximal ends thereof, the method further comprising the step for:

15 selectively manipulating the angling device near the proximal end of the cannula to deflect the retractor and displace the vessel structure engaged therewith at the distal end of the cannula.

34. (New) The method according to claim 33 in which the angling device includes a tension member attached to the retractor and to a handle near the proximal end of the cannula, the method further comprising the step for:

20 manually manipulating the handle to exert deflecting force on the retractor through the tension member.